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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,882	07/09/2003	Kamlesh Rath	COWA0003	2633

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EXAMINER

GONZALEZ, AMANCIO

ART UNIT	PAPER NUMBER
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2617

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,882

Applicant(s)

RATH, KAMLESH

Examiner

Amancio Gonzalez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 7/9/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/9/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/9/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-4, 7, and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acampora (US Pat 6314163) in view of Porter et al. (US Pat 6687503), furthering view of Meier et al. (US Pat 6826165), further in view of Bojeryd (US Pat 5946622), further in view of Gil et al. (US Pat 6424836)

Consider claim 1, Acampora shows a mesh access network (see col. 7, lines 53-57; col. 8), comprising: at least one base-station (see col. 6, lines 11-25). Although Acampora does not explicitly show a base-station comprising a plurality of sectors, Porter et al., in related art, show a wireless access network in which each cell, which can be served by a single base-station (see col. 3, lines 37-42), is divided into a plurality of sectors (see col. 5, lines 27-31; fig. 2). Although Acampora and Porter et al. do not

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mention "terminal nodes" verbatim, Meier et al., in related art, show internal nodes in a base-stations (see col. 8, lines 32-36); and wherein said nodes in each sector are arranged in a tree structure starting from said base-station (see the Abstract; col. 2, lines 17-26; col. 3, lines 30-36; fig. 1). Although Acampora, Porter et al., and Meier et al. do not explicitly mention said terminal nodes comprising both indoor terminal nodes and outdoor terminal nodes, and comprising a plurality of outdoor repeaters, Bojeryd, in related art, shows a network that includes indoor and outdoor communication nodes and repeaters [reads: pico-cells] in and outdoor [reads: out of a building] and indoor [reads: inside of a building] area (see col. 1, lines 51-67; col. 2, lines 1-4; col. 4, lines 12-14). Acampora, Porter et al., Meier et al., and Bojeryd do not explicitly show wherein said base-station sectors use different frequency bands that are located in alternate sectors of said base-station. However, Gil et al., in related art, teach alternate cell and sector frequency band [reads: channel] allocation (see col. 5, lines 57-67; col. 6, lines 1-25).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Acampora, Porter et al., Meier et al., Bojeryd and Gil et al. in order to provide means for establishing virtual connection between a mobile communication device and a network for the purpose of effecting data and/or voice communication in more convenient and effective ways.

Regarding a module for interference management and sector reuse comprising network management of frequency, time, and directionality, the Examiner takes Official

Notice that these are well-known control elements and techniques used in the wireless communication art.

Consider claims 2-4 and 7, Acampora, as modified by Porter et al., Meier et al., Bojeryd and Gil et al., teaches claim 1; and Bojeryd further teaches repeater functions in the network (see col. 4, lines 6-37).

Consider claim 12, Acampora, as modified by Porter et al., Meier et al., Bojeryd and Gil et al., teaches claim 1, and further teaches a tree structure in the network (see col. 4, lines 52-67; col. 5, lines 1-10; col. 12, lines 9-12, 54-60).

Consider claims 13-18, Acampora, as modified by Porter et al., Meier et al., Bojeryd and Gil et al., teaches claim 1, but fails to mention time-slot switching technique. However, Barnes et al., in related art, teach time-slot switching techniques (see col. 6, lines 24-41). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Acampora, Porter et al., Meier et al., Bojeryd, Gil et al., and Barnes et al., in order to provide means for efficiently handling the switching of repeater nodes in a wireless access network.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acampora (US Pat 6314163) in view of Porter et al. (US Pat 6687503), furthering view of Meier et al. (US Pat 6826165), further in view of Bojeryd (US Pat 5946622), further in

view of Gil et al. (US Pat 6424836), as applied to claim 1 above, further in view of Bustamante et al. (US Pat 5809431).

Consider claims 5 and 6, Acampora, as modified by Porter et al., Meier et al., Bojeryd and Gil et al. teaches claim 1, but does not explicitly show a frequency reuse scheme. However, Bustamante et al., in related art, teach a frequency reuse scheme (see col. 6, lines 26-40). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Acampora, Porter et al., Meier et al., Bojeryd, Gil et al., and Bustamante et al. in order to provide a frequency reuse scheme in a cellular network for the purpose of increasing capacity and minimizing co-channel interference.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acampora (US Pat 6314163) in view of Porter et al. (US Pat 6687503), furthering view of Meier et al. (US Pat 6826165), further in view of Bojeryd (US Pat 5946622), further in view of Gil et al. (US Pat 6424836), as applied to claims 1 and 7 above respectively, further in view of Ngan et al. (US Pat 6973312).

Consider claims 8 and 9, Acampora, as modified by Porter et al., Meier et al., Bojeryd and Gil et al. teaches claims 1 and 7 above, respectively, but does not mention increasing capacity adding carrier. Ngan et al., in related art, teach increasing cell capacity by adding carrier (see col. 1, lines 1-3; col. 5, lines 47-52). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was

made to combine the teachings of Acampora, Porter et al., Meier et al., Bojeryd, Gil et al., and Ngan et al. in order to provide means for control the frequency plan of a cellular network for the purpose of accommodating a greater number of users in a required moment at a determined coverage area.

Consider claim 10, Acampora, as modified by Porter et al., Meier et al., Bojeryd and Gil et al., and further modified by Ngan et al., teaches claim 9; and Bojeryd further teaches repeater functions in the network (see col. 4, lines 6-37).

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acampora (US Pat 6314163) in view of Porter et al. (US Pat 6687503), furthering view of Meier et al. (US Pat 6826165), further in view of Bojeryd (US Pat 5946622), further in view of Gil et al. (US Pat 6424836), as applied to claims 1 and 7 above respectively, further in view of Ngan et al. (US Pat 6973312), as applied to claim 9 above, further in view of Barnes et al. (US Pat 5724515).

Consider claim 11, Acampora, as modified by Porter et al., Meier et al., Bojeryd and Gil et al., further modified by Ngan et al., teaches claim 9, but fails to mention time-slot switching technique. However, Barnes et al., in related art, teach time-slot switching techniques (see col. 6, lines 24-41). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Acampora, Porter et al., Meier et al., Bojeryd, Gil et al., Ngan et al., and Barnes et al.,

in order to provide means for efficiently handling the switching of repeater nodes in a wireless access network.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Amancio González, whose telephone number is (571) 270-1106. The Examiner can normally be reached on Monday-Thursday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Nick Corsaro can be reached at (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Amancio González
AG/ag

November 24, 2006


NICK CORSARO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600